

## PATENT COOPERATION TREATY

PCT  
NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 72.2)

DEC 04 2001

From the INTERNATIONAL BUREAU

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JAPONRECEIVED  
DEC 05 2001  
TC 1700

Date of mailing (day/month/year) 22 August 2001 (22.08.01)	
Applicant's or agent's file reference 661504	IMPORTANT NOTIFICATION
International application No. PCT/JP00/00372	International filing date (day/month/year) 26 January 2000 (26.01.00)
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. et al	

## 1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

## 2. Transmittal of the copy of the translation to the elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

EP,CN,US

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

KR

## 3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer Elliott PERETTI Telephone No. (41-22) 338.83.38
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**Translation**

PATENT COOPERATION TREATY  
**PCT**  
INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

**RECEIVED**  
DEC 05 2001  
**TC 1700**

Applicant's or agent's file reference 661504	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP00/00372	International filing date (day/month/year) 26 January 2000 (26.01.00)	Priority date (day/month/year) 29 January 1999 (29.01.99)
International Patent Classification (IPC) or national classification and IPC H01L 21/60		
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.  
☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 31 May 2000 (31.05.00)	Date of completion of this report 26 February 2001 (26.02.2001)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP00/00372

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
pages \_\_\_\_\_ 1-98 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages \_\_\_\_\_ 1-45 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_ 46-49 \_\_\_\_\_, filed with the letter of \_\_\_\_\_ 27 October 2000 (27.10.2000)
- ☒ the drawings:  
pages \_\_\_\_\_ 1-56 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-24, 26, 30-32, 34-42, 44-46	YES
	Claims	25, 27-29, 33, 43, 47-49	NO
Inventive step (IS)	Claims	1-24, 26, 31, 32, 34-42, 44-46	YES
	Claims	25, 27-30, 33, 43, 47-49	NO
Industrial applicability (IA)	Claims	1-49	YES
	Claims		NO

### 2. Citations and explanations

- Document 1: JP, 8-222599, A (Mitsubishi Electric Corp.), August 30, 1996 (30.08.96)
- Document 2: JP, 10-308417, A (Oki Electric Industry Co., Ltd.), November 17, 1998 (17.11.98)
- Document 3: JP, 10-321669, A (Murata Mfg. Co., Ltd.), December 4, 1998 (04.12.98)
- Document 4: JP, 10-256306, A (Hitachi Chemical Co., Ltd.), September 25, 1998 (25.09.98)
- Document 5: JP, 5-70750, A (Fujitsu Ltd.), March 23, 1993 (23.03.93)
- Document 6: JP, 10-4097, A (Sharp Corp.), January 6, 1998 (06.01.98)
- Document 7: JP, 10-13002, A (Matsushita Electric Industrial Co., Ltd.), January 16, 1998 (16.01.98)
- Document 8: JP, 5-13119, A (Sharp Corp.), January 22, 1993 (22.01.93)
- Document 9: JP, 10-84014, A (Shinko Electric Industries Co., Ltd.), March 31, 1998 (31.03.98)
- Document 10(addition): WO, 98-30073, A (Matsushita Electric Industrial Co., Ltd.), July 9, 1998 (09.07.98)
- Document 11(addition): JP, 2000-223534, A (Toshiba Corp.),

August 11, 2000 (11.08.00)

Claims 1 to 7, 10 to 17, 20, 22, 23 and 46

The invention disclosed in Claims 1 to 7, 10 to 17, 20, 22, 23 and 46 involves an inventive step in relation to Documents 1 to 9 cited in the international search report. Documents 1 to 9 do not disclose the feature wherein "the electronic component and the circuit substrate are joined together while placing an anisotropic conductive layer containing conductive particles within an insulating resin containing an inorganic filler". Moreover, a person skilled in the art would not easily be able to conceive of this feature in the light of the disclosures in Documents 1 to 9.

Claims 8, 9, 31, 32 and 35

The invention disclosed in Claims 8, 9, 31, 32 and 35 involves an inventive step in relation to Documents 1 to 9 cited in the international search report. Documents 1 to 9 do not disclose the feature wherein "the insulating resin is hardened while strongly bending the substrate by applying pressure P1 and, after a predetermined amount of time has passed, the aforementioned pressure P1 is reduced to a weaker pressure P2." Moreover, a person skilled in the art would not easily be able to conceive of this feature in the light of the disclosures in Documents 1 to 9.

Claims 18, 19, 21, 24 and 37 to 42

The invention disclosed in Claims 18, 19, 21, 24 and 37 to 42 involves an inventive step in relation to Documents 1 to 9 cited in the international search report. Documents 1 to 9 do not disclose the feature of "an anisotropic layer having a section in which the amount of inorganic filler contained in the insulating resin is

small." Moreover, a person skilled in the art would not easily be able to conceive of this feature in the light of the disclosures in Documents 1 to 9.

Claims 25, 27, 29, 33, 43 and 47 to 49

The invention disclosed in Claims 25, 27, 29, 33, 43 and 47 to 49 lacks novelty over newly cited Document 10. The invention disclosed in Claims 25, 27, 29, 33, 43 and 47 to 49 is disclosed in Embodiments 1 and 2 of Document 10.

Claims 26, 28, 34, 44 and 45

The invention disclosed in Claims 26, 28, 34, 44 and 45 involves an inventive step in relation to Documents 1 to 9 cited in the international search report. Documents 1 to 9 do not disclose the feature of "preventing the neck section of the bump from collapsing by applying a load of 20gf or less to the bump." Moreover, a person skilled in the art would not easily be able to conceive of this feature in the light of the disclosures in Documents 1 to 9.

Claim 30

The invention disclosed in Claim 30 does not involve an inventive step in the light of newly cited Document 10 and Document 6. Fig. 1 of Document 6 indicates that  $\alpha=45$  and this is equivalent to the chamfer angle being  $90^\circ$ . It would be easy for a person skilled in the art to form the bumps in the invention disclosed in Document 10 using a capillary having this chamfer angle.

Claim 36

The invention disclosed in Claim 36 involves an inventive step in relation to Documents 1 to 9 cited in the international search report. Documents 1 to 9 do not

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disclose the feature of "several types of inorganic fillers which have different average particle diameters." Moreover, a person skilled in the art would not easily be able to conceive of this feature in the light of the disclosures in Documents 1 to 9.